

CLAIMS

WE CLAIM:

1. An electrical cable comprising:
a series of mutually insulated and parallel electrical conductors joined
edgewise to form a flexible ribbon;
a first conforming flexible electrical shield covering the ribbon;
5 a flexible insulating layer covering the first conforming flexible electrical
shield; and
a second conforming flexible electrical shield covering the insulating layer.
2. The electrical cable of claim 1 including further an outer insulating jacket
covering the second conforming electrical shield.
3. The electrical cable of claim 1 wherein the first and second conforming
flexible electrical shields are metal foil.
4. The electrical cable of claim 3 wherein the first and second conforming
flexible electrical shields are pleated.
5. The electrical cable of claim 1 further including at least one connector
providing, within a connector shell, a plurality of releasable connector elements for
electrically and mechanically engaging with corresponding elements in a second
connector, the connector elements connected to the electrical conductors of the
cable.
6. The electrical cable of claim 5 wherein the connector shell is electrically
connected to the second conforming flexible electrical shield and the first
conforming conductive electrical shield is connected to one of the connector
elements.

7. A cable assembly providing electrical communication of a series of signals from a first electrical device to a second electrical device comprising:

- a series of first terminals associated with the first electrical device including multiple signal terminals and at least one signal return terminal and at least one earth ground separate from the signal return terminal;
- 5 a series of second terminals associated with the second electrical device including multiple signal terminals and at least one signal return terminal;
- a series of mutually insulated and parallel electrical conductors joined edgewise to form a flexible ribbon, wherein the conductors are attached to the terminals so that electrical conductors carrying signal returns alternate with conductors carrying signals;
- 10 a first conforming flexible electrical shield covering the ribbon and attached to a signal return terminal;
- an insulating layer covering the outside of the first conforming flexible electrical shield; and
- 15 a second conforming flexible electrical shield covering the insulating layer and attached to the earth ground.

8. The cable assembly of claim 7 wherein the cable further includes an outer insulating jacket covering the second conforming electrical shield.

9. The cable assembly of claim 7 wherein the first and second conforming flexible electrical shields are metal foil.

10. The cable assembly of claim 9 wherein the first and second conforming flexible electrical shields are pleated.

11. The cable assembly of claim 7 wherein the terminals are a plurality of releasable connector elements within a connector shell for electrically and mechanically engaging with corresponding elements in a second connector, the connector elements connected to ones of the electrical conductors of the cable and

5 the connector shell electrically connected to the second conforming flexible electrical shield and the first conforming conductive electrical shield connected to one of the connector elements.

12. A photon emission tomography (PET) scanner comprising:

a series of spatially separated detectors detecting photon emissions at points about a ring shaped gantry;

5 detector modules collecting signals from the detectors and presenting a series of first terminals providing multiple asynchronous event signals referenced to at least one signal return terminal;

at least one earth ground separate from the signal return terminal;

detector signal processing circuitry including a series of second terminals providing multiple signal terminals and at least one signal return terminal;

10 a plurality of cables connecting the detector modules to the detector signal processing circuitry, each cable including:

(i) a series of mutually insulated and parallel electrical conductors joined edgewise to form a flexible ribbon with the conductors attached to the terminals so that conductors carrying signal return signals alternate with conductors carrying signals;

15 (ii) a first conforming flexible electrical shield covering the ribbon and attached to a signal return terminal;

(iii) an insulating layer covering the outside of the first conforming flexible electrical shield; and

20 (iv) a second conforming flexible electrical shield covering the insulating layer attached to the earth ground.

13. The PET scanner of claim 12 wherein the cable further includes an outer insulating jacket covering the second conforming electrical shield.
14. The PET scanner of claim 12 wherein the first and second conforming flexible electrical shields are metal foil.
15. The PET scanner of claim 12 wherein the first and second conforming flexible electrical shields are pleated.
16. The PET scanner of claim 12 wherein the terminals are a plurality of releasable connector elements within a connector shell for electrically and mechanically engaging with corresponding elements in a second connector, the connector elements connected to ones of the electrical conductors of the cable and the connector shell electrically connected to the second conforming flexible electrical shield and the first conforming conductive electrical shield connected to one of the connector elements.

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